

### Abstract

A method and system is provided for an enhancement to an MPLS network that enables at least a portion of reserved resources along an existing LSP to be changed in response to changed/new flow(s) of packets from an existing connection without having to tear the existing LSP down and create a new LSP for the newly reserved resources. In a homogenous network (each router along an LSP practices the invention), an Enhanced LSR (ELSR) employs an Enhanced Multi-Protocol Label Switching (EMPLS) stack to generate EMPLS labels for the forwarding of packets along a new LSP. Once the LSP is setup with the EMPLS labels, the RSVP protocol can be used to change resource reservations at each ELSR along the existing LSP for changed/new flow(s) from an existing connection without tearing down the existing LSP and creating a new LSP.

